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*Stated Meeting, February 5, 1869.*

Present, fifteen members.

Dr. GEORGE B. WOOD, President, in the Chair.

Mr. Binney, Gen. Tyndale and Mr. Lyman, new members, took their seats.

Letters of acknowledgment were received from the Academy at Amsterdam, Royal Library at the Hague, Batavian Society at Rotterdam, Zoological and Statistical Societies at London, Leeds Philosophical Society, American Statistical Society, Massachusetts and New Jersey Historical Societies, Boston City Library, Yale College, Peabody Institute, and also from the Philadelphia College of Physicians, returning thanks for a donation of duplicate pamphlets.

Letters of envoi were received from the Geog. Soc., Vienna, June 30; Holl. Soc., Harlem, May 20; Acad., Amsterdam, Sep. 2; Central Bureau of Statistics, Sweden, Nov. 25, 1868.

Donations for the Library were received from Prof. Zantedeschi; the Geographical Societies of St. Petersburg, Vienna and London; Academies and Societies of Amsterdam, Rotterdam, Harlem and Nürnberg; Antiquarian Societies at Copenhagen and London; Central Bureau at Stockholm; Astronomical and Geological Societies at London; Nat. Hist. Soc. and Pub. Lib., Boston; Amer. Oriental Society; Silliman's Journal; Medical News; Acad. Nat. Sci., Philadelphia; Dr. Carson; Wisconsin Historical Society; and Fendall's executors at Washington.

The Librarian communicated for publication in the Proceedings a vertical section of the coal measures of the Georges Creek portion of the Cumberland Basin, made some years ago, with great care, by the State Chemist and Geologist of Maryland, Mr. Philip T. Tyson of Baltimore. On motion it was referred to the Secretaries with power to publish.



## SECTION OF CUMBERLAND COAL BASIN.

BY PHILIP T. TYSON OF BALTIMORE.

It contains the position and thickness of rocks of the entire "Potomac Coal Field," amounting to about 1400 feet.

In order to have a fixed base I have made the heights on the left hand margin from the level of tide water, beginning at 670 feet. This was obtained from the maps and profiles of the Baltimore and Ohio Railroad, of which I had copies.

I had also those of the Georges Creek Coal and Iron Company, which connected with the Baltimore and Ohio Railroad. In addition to these I caused numerous other levelings and measurements to be made between Georges Creek and the Savage Mount, and was therefore enabled to construct the entire section from actual measurement, with the aid of very extensive diggings, whilst making Geological Surveys for the Georges Creek Coal and Iron Company in 1852.

This section extends down to the Devonian, and I have also examined and find its beds precisely like those below the Yohogheny Coal Field and the Great Western Field, as seen in the Gap a few miles east of Connellsville.

The measurements from 670 to 1120 feet were taken on the Savage river and Potomac. From thence to 1349 feet on Mill run, which flows into Georges Creek. From thence to 1443 feet on Laurel run, which also flows into Georges Creek. From 1443 feet on the S. E. face of Dug hill, at the foot of which is Lonoconing.

| <i>Feet above Tide.</i> | <i>Thickness.</i> | <i>Character of Rock.</i>   |
|-------------------------|-------------------|-----------------------------|
|                         | 1' 6"             | Shale.                      |
|                         | 2' 0"             | Coal.                       |
| 2050                    | 19' 0"            | Shaley Sand Stone.          |
|                         | 23' 6"            | Shale.                      |
|                         | 6' 0"             | Coal.                       |
|                         | 12' 0"            | Limestone with Shale seams. |
| 2000                    | 13' 9"            | Fire Clay.                  |
|                         | 3' 9"             | Unknown.                    |
|                         | 27' 3"            | Nodules of Iron in Shale.   |
| 1950                    | 27' 9"            | Shale.                      |
|                         | 3' 6"             | Sand Stone, fine grain.     |
|                         | 2' 6"             | Shale.                      |
|                         | 4' 3"             | Coal (2" shale parting).    |
|                         | 10' 0"            | Fire Clay.                  |
|                         | 3' 6"             | Coal.                       |
| 1900                    | 3' 0"             | Fire Clay.                  |
|                         |                   | Sand Stone Shaley.          |
|                         | 51' 0"            | Sand Stone Micaceous.       |
| 1850                    |                   | Sand Stone Coarse.          |
|                         | 42' 6"            | Shales, not fully examined. |
|                         | 4' 6"             | Coal.                       |
|                         | 2' 0"             | Shale.                      |



| <i>Feet above Tide.</i> | <i>Thickness.</i> | <i>Character of Rock.</i>          |
|-------------------------|-------------------|------------------------------------|
| 1800                    | 1' 0''            | Coal.                              |
|                         | 4' 9''            | Shale.                             |
|                         | 10''              | Coal.                              |
|                         | 1' 3''            | Shale.                             |
|                         | 1' 0''            | Shaley Sand Stone.                 |
|                         | 4' 8''            | Shale ferruginous.                 |
|                         | 14' 0''           | MAIN COAL.                         |
|                         | 4''               | Bands of Iron ore.                 |
|                         | 11' 8''           | Shale.                             |
|                         | 3' 0''            | Fire Clay.                         |
| 1750                    | 1' 6''            | Limestone.                         |
|                         | 15' 6''           | Shale.                             |
|                         | 29' 0''           | Sand Stone, fine grain.            |
| 1700                    | 27' 6''           | Shale.                             |
|                         | 2' 6''            | Coal.                              |
|                         | 4' 0''            | Shale.                             |
| 1650                    | 16' 8''           | Shale. Ore No. 20 at its top.      |
|                         | 1' 0''            | Shale ferruginous.                 |
|                         | 3' 9''            | Coal.                              |
|                         | 1' 0''            | Shale.                             |
|                         | 1' 0''            | Coal.                              |
|                         | 2' 6''            | Ore Nos. 17, 18 and 19 in Shale.   |
|                         | 3' 0''            | Ore No. 16 in Fire Clay.           |
|                         | 6''               | Shale.                             |
|                         | 1' 0''            | Coal.                              |
|                         | 7''               | Ore No. 15 in Shale.               |
|                         | 2' 0''            | Ore balls in stratum of Fire Clay. |
|                         | 6''               | Shale.                             |
|                         | 1' 6''            | Coal.                              |
|                         | 2' 6''            | Shale.                             |
|                         | 5' 6''            | Ores No. 13 and 14 in Fire Clay.   |
|                         | 1' 6''            | Sand Stone.                        |
|                         | 6' 6''            | Ores 12, 11, 10, 9 in Shale.       |
|                         | 6' 6''            | Shale with ore balls Nos. 8 and 7. |
|                         | 7''               | Ore No. 6.                         |
|                         | 4' 3''            | Shale with ore No. 5.              |
|                         | 6''               | Coal.                              |
|                         | 6''               | Ore No. 4 in Shale.                |
|                         | 1' 6''            | Coal.                              |
|                         | 2' 0''            | Shale.                             |
|                         | 2' 3''            | Shale and Coal together.           |
|                         | 2' 2''            | Ore No. 3 in Shale.                |
|                         | 2' 1''            | Coal.                              |
|                         | 6''               | Shale.                             |
| 1600                    | 2' 8''            | Ore No. 2 in Fire Clay.            |
|                         | 4' 10''           | Ore No. 1 in Shale.                |



| <i>Feet above Tide.</i> | <i>Thickness.</i> | <i>Character of Rock.</i>   |
|-------------------------|-------------------|---|
|                         | 2' 6"             | Ore in Shale.   |
|                         | 1' 6"             | <div> <div>Upper black band Ore.</div> <div>Undermine in the 3'' Coal and all the Ore above for 4' will come down. If stacked in rows and self-washed for a month, it will yield 40 0-0.</div> </div> |
|                         | 3''               | Coal.   |
|                         | 2' 0''            | Shaley Sand Stone.  |
|                         | 4' 6''            | Shale.  |
|                         | 2' 6''            | Coal.   |
|                         | 3' 0''            | Limestone.  |
|                         | 3' 6''            | Fire Clay.  |
|                         | 8''               | Coal.   |
|                         | 1' 6''            | Shale.  |
|                         | 1' 6''            | Shale ferruginous.  |
|                         | 1' 0''            | Shale.  |
|                         | 1' 3''            | Coal.   |
|                         | 1' 3''            | Shale.  |
|                         | 1' 6''            | Coal.   |
|                         | 1' 6''            | Shale.  |
|                         | 1' 6''            | Coal.   |
|                         | 2' 8''            | Shale, brown.   |
|                         | 5' 0''            | Shale, sandy with balls.  |
| 1550                    | 8' 0''            | Shaley Sand Stone.  |
|                         | 4' 6''            | Shale.  |
|                         | 1' 6''            | Coal.   |
|                         | 7' 4''            | Fire Clay.  |
|                         | 5' 0''            | Shales ferruginous.   |
|                         | 7' 0''            | Shale with balls.   |
|                         | 2' 0''            | Shale ferruginous.  |
|                         | 1' 0''            | Shale.  |
| 1500                    | 39' 0''           | Sand Stone.   |
|                         | 15' 0''           | Shale.  |
|                         | 3' 0''            | Ore in Fire Clay.   |
|                         | 6' 0''            | Limestone.  |
|                         | 2' 0''            | Ore in Fire Clay.   |
| 1450                    | 10' 0''           | Shale.  |
|                         | 44' 0''           | Sand Stone.   |
| 1400                    | 8''               | Coal.   |
|                         | 10''              | Shale.  |
|                         | 2' 2''            | Limestone   |
|                         | 23' 6''           | Sand Stone.   |



| <i>Feet above Tide.</i> | <i>Thickness.</i> | <i>Character of Rock.</i>                               |
|-------------------------|-------------------|---|
|                         | 6' 0''            | Shale.  |
|                         | 6' 0''            | Hard black band.  |
|                         | 6' 0''            | Shale very ferruginous.                                 |
|                         | 4' 6''            | Shale.  |
| 1350                    | 1' 8''            | Coal Shaley.  |
|                         | 1' 0''            | Coal hard.  |
|                         | 3' 0''            | Coal good.  |
|                         | 4' 0''            | Sandy Fire Clay.  |
|                         | 6' 0''            | Ore in Shaley Fire Clay.                                |
|                         | 6' 0''            | Limestone.  |
| 1300                    | 33' 0''           | Sand Stone.   |
|                         | 9' 6''            | Shale.  |
|                         | 11' 0''           | { Ore balls.<br>Marine shells.<br>Balls in Shale.       |
|                         | 2''               | Coal.   |
|                         | 6' 0''            | Shale.  |
|                         | 2' 2''            | Coal.   |
|                         | 14' 0''           | Shale.  |
| 1250                    | 4' 0''            | Coal.   |
|                         | 25' 6''           | { Shales.<br>Fire Clay.<br>Sand Stone.<br>Not explored. |
|                         | 2' 0''            | Coal.   |
| 1200                    | 102'              | { Unknown.<br>Coal crop near top.                       |
| 1150                    |                   | { Sand Stone at bottom.<br>Ferruginous Shale.           |
|                         | 24' 0''           | { Grey Shale.<br>Black Shale.                           |
| 1100                    | 2' 0''            | { Six feet Coal.  |
|                         | 6''               |   |
|                         | 3' 6''            |   |
|                         | 3' 0''            | Fire Clay.  |
|                         | 6' 0''            | Shales with balls of ore.                               |
|                         | 27' 0''           | Unknown.  |
|                         | 8' 0''            | Coal.   |
| 1050                    | 4''               | Shale.  |
|                         | 19' 0''           | Sand Stone.   |
|                         | 8''               | Coal.   |
|                         | 20' 0''           | { Shales.<br>Fire Clay.<br>Shales.<br>Fire Clay.        |
|                         | 1' 6''            | Coal.   |



| <i>Feet above Tide.</i> | <i>Thickness.</i> | <i>Character of Rock.</i>  |
|-------------------------|-------------------|--|
| 1000                    | 10' 0''           | Fire Clay.   |
| 950                     | 92' 0''           | Sand Stone [XII].  |
|                         |                   | This rock is constant. It makes the flat summit of the west mountain; and, north of Savage creek, has lying on it isolated cubic blocks, fragments of itself, as large as three story houses, very remarkable objects. |
|                         | 3' 0''            | Large balls of ore.  |
| 900                     | 14' 6''           | Shale.   |
|                         | 3''               | Shale Coal.  |
|                         | 12' 3''           | Sand Stone, thin layers.   |
|                         | 2' 0''            | Coal.  |
|                         | 2' 6''            | Shale.   |
| 850                     | 42' 6''           | (Sand Stone, &c., not explored.)   |
|                         | 7' 6''            | Ore in Shale.  |
| 800                     | 83' 0''           | (Principally Sand Stone, ?)  |
| 750                     | 2' 6''            | Coal.  |
|                         | ? ?               | Shale. Small interval.   |
|                         | 27' 0''           | Sand Stone, thin bedded.   |
|                         | 2' 0''            | Lowest known coal bed.   |
|                         | 160' 0''          | Principally Sand Stone, but not much explored.   |
| 550                     | 90' 0''           | Green Shale of XI.   |
| 450                     | ? ?               | Grey Limestone of XI.  |

Mr. Chase communicated the results of a careful discussion of Philadelphia Life Tables, extending through 62 years, and including more than 400,000 lives.

On motion of the Librarian, the subject of the propriety of publishing the MSS. grammars of the Chol and Cokchiquel languages, in the Society's Library, was referred to the Publication Committee, to report thereon, after consultation with Dr. Brinton.

Pending nominations Nos. 622, 623 were read.

At Prof. Coffin's request and on motion of Prof. Kendall, the Officers of the Society were authorized to sign a memorial to Congress praying for a sufficient appropriation for observing properly the total eclipse in August next.

On motion of Mr. Fraley the renting or otherwise disposing of the Hall was referred to a committee consisting of Messrs. Price, Fraley, Welsh, Rushenberger and Cresson.

And the Society was adjourned.